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D. H. T. 10/1/62  
A Summary of Current Program 10/1/62 - Oct. 1, 1962 -

and Preliminary Report of Progress //

for 10/1/60 to 9/30/62

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2 U.S. FARMER COOPERATIVE SERVICE //

UNITED STATES DEPARTMENT OF AGRICULTURE

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C & R-PREP.

This progress report of U.S.D.A. and cooperative research is primarily a tool for use of scientists and administrators in program coordination, development and evaluation; and for use of advisory committees in program review and development of recommendations for future research programs.

There is included under each problem area in the report a brief and very general statement on the nature of the research being conducted by the State Agricultural Experiment Stations and the professional manpower being devoted by the State stations to such research. Also included is a brief description of related work conducted by private organizations. No details on progress of State station or industry research are included except as such work is cooperative with U.S.D.A.

The summaries of progress on U.S.D.A. and cooperative research include some tentative results that have not been tested sufficiently to justify general release. Such findings, when adequately confirmed will be released promptly through established channels. Because of this, the report is not intended for publication and should not be referred to in literature citations. // Copies are distributed only to members of Department staff, advisory committee members and others having a special interest in the development of public agricultural research programs. ← 8

This report also includes a list of publications reporting results of U.S.D.A. and cooperative research issued between October 1, 1960 and September 30, 1962. This progress report was compiled in the Farmer Cooperative Service, U. S. Department of Agriculture, Washington 25, D. C.

UNITED STATES DEPARTMENT OF AGRICULTURE

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## INTRODUCTION

The function of the Farmer Cooperative Service is to help farmers build effective cooperative business enterprises to serve their needs in marketing, purchasing and other services. The Service conducts economic research, and does educational and advisory work to assist the 3 million farmers who are members of the 9,300 marketing, purchasing and related business service cooperatives.

The Service acquires, analyzes, publishes and disseminates information about farmer cooperatives to further their sound development. Studies are made to improve cooperatives' organization structure, management, financing and operating methods. Marketing research is conducted on methods, costs, processing, distribution and selling of farm products by farmer cooperatives.

The Farmer Cooperative Service has a total staff of 104, including 43 professional economists and 2 marketing specialists. All the staff is located in Washington, D. C. In addition, the Service supervises marketing research contracts equivalent to 1 man-year per year.

The three program Divisions - Marketing, Purchasing and Business Administration - correspond to the three work areas in this report. Much of the work of the Service is conducted in close cooperation with land-grant colleges, State extension services, State departments of agriculture and banks for cooperatives. Most of these arrangements are informal but some of the research work with experiment stations is conducted under contract. At the present time, the Service has 6 research contracts with land-grant colleges.

Many cooperative associations have problems of developing sound operating plans and efficient methods. They need to consolidate into more effective organizations and establish joint sales programs to enable farmers to meet the requirements of mass merchandising and to strengthen the farmers' competitive position.

Increasing costs in production and marketing call for continued efforts for more efficient operation of cooperatives. The benefits of efficiency are two-fold. Savings from efficiency go direct to the farmer-member and thus increase his net income and, too, efficient cooperative operations provide a yardstick for other businesses and are a means of limiting wide margins.

Modern farm operations have greatly expanded the need for production supplies and services and cooperatives must adjust to the changing technology in agriculture if they are to effectively serve the purchasing needs of farmers.



Following are some recent work accomplishments of the Service.

### Coordination of Cooperatives

Combining the operations of individual cooperatives is an effective way to help them achieve adequate volume and diversification. This also gains more bargaining strength for farmers and brings about operating efficiencies. Preliminary findings of a study of dairy cooperatives in the southeast indicate substantial savings through a coordinated system for assembling and manufacturing reserve milk. Egg marketing cooperatives in California have recently joined together as a follow-up to studies on the advisability and feasibility of coordinating the operations of egg and poultry cooperatives. Similar work is underway on grain, oilseeds, livestock and fruits and vegetables.

### Incentive Payment and Fringe Benefit Plans of Farmer Cooperatives Evaluated

Farmer cooperatives are seeking ways to improve their operations by increasing employee efficiency and by attracting and holding topnotch personnel. Incentive payment, annuity, and fringe benefit plans, such as group insurance, often make jobs more inviting. Recognizing this, farmer cooperatives are showing increased interest in these forms of employee compensation. The publication from this study offers substantive guidelines to cooperatives contemplating installation of, or changes in, employee incentive payment programs. It includes case studies of detailed plans of five midwest farmer cooperatives, and appraises the advantages and disadvantages of the various plans.

### Criteria for Evaluating Dairy Cooperatives

Leaders of dairy cooperatives, educational and advisory workers, and administrators of governmental programs have needed a basis for distinguishing an actual (bona fide) from an imitation (pseudo) cooperative. Research to develop standards for determining the cooperative character of individual dairy organizations provides a set of measures designed for appraisal of dairy organizations to determine whether they meet acceptable standards as cooperative organizations. It also sets forth principles of organization and operation of dairy cooperatives that should be followed by cooperatives to best serve the needs of their members. Results of this study will assist in maintaining forms of organization and policies of operation that will help farmers obtain maximum returns and stable markets.

### Reducing Livestock Loss and Damage

FCS is studying loss and damage to livestock through handling and transportation during marketing. Farmers and their livestock marketing agencies incur a loss of more than \$50 million each year due

to injury, death and other forms of damage associated with the movement of live animals from farms and feedlots to final destinations. One study showed that losses on transporting and handling sheep and lambs amount to \$2 million a year; abusive handling was a principal factor.

Statements by responsible leaders in the livestock industry indicate this work has resulted in improved methods and facilities for handling livestock.

#### Seed Transportation and Handling Studies

Costs of handling and transporting seeds to farmers can be substantially reduced. To assist seed firms in doing this, FCS is studying ways to improve methods and facilities for handling and transporting seed. A study of seven regional wholesale cooperatives in 13 southeastern States indicates that the position of growers would be strengthened by: More contract production, obtaining additional transit privileges, additional facilities for warehousing and storing, and use of power equipment.

#### Peanut Marketing

Marketing problems, and opportunities, have been created for growers and first-buyers of farmers' stock peanuts as a result of technological changes in harvesting methods, increased use of bulk handling facilities, and changes in the structure of the market. Findings from a comprehensive study of the marketing of farmers' stock peanuts in the Virginia-North Carolina area, conducted in cooperation with the North Carolina State College, will provide guidelines to growers and buyers. Results of the study will improve efficiency and reduce costs in the marketing of this crop. Reports from this research cover marketing at the grower level and at the first-buyer level, as well as analysis of economic problems in the efficient use and location of bulk handling facilities.

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In this report, there is presented a description of the Service's program as of September 30, 1962, and a summary of progress for the period October 1, 1960 through September 30, 1962. The Research and Marketing Advisory Committees, in their meetings during fiscal 1962, devoted their attention to a review of the research program of the Department, hence this report provides information on progress to cover the period since the last report on progress to the Committees.



## AREA NO. 1: COOPERATIVE MARKETING

Problem: Farmers, in marketing their production, face a revolutionary change in terms of market organization and marketing practices. The growth of supermarkets and volume distribution dominate the retailing of agricultural products. To serve this type of market requires large quantities, uniformly good quality and frequent delivery. The small farmer, working alone or a cooperative or local firm of limited size often cannot meet these specifications. Cooperatives must find ways to consolidate volume, either through internal growth, merger, acquisition or federation to help them meet the needs of mass merchandising.

The increased costs in marketing farm products call for more efficient organizations. Ways must be found to increase efficiency through improved operations, better organization, and more mechanization. This is particularly important for both cooperative members and other farmers, since the principle of services at cost provides an effective means for limiting wide marketing margins.

The direct procurement by retailers and other large buyers has resulted in their bypassing many traditional marketing institutions. This has many implications to cooperatives and other first handlers. They face the question of whether they will undertake additional marketing functions or forfeit their performance to other types of marketing agencies. Direct marketing also affects methods of establishing prices. For many commodities, prices are now established in the open market on only a small volume. This increases the need for more reliance on analysis of price-making forces and is a basic reason for development of cooperative bargaining by farmers. Mass merchandising and self-service encourage preselling by aggressive advertising, promotion and brand selling. Farmer cooperatives and other shippers and processors seek answers to the question of whether they should perform such services, or leave them to someone else.

Farmer cooperatives are an important part of the distribution system and represent a major potential for meeting the farmers' marketing problems in the modern distribution system. They are organized and operated to increase farmers' net income. Through cooperatives farmers seek to increase their bargaining power; obtain needed services at cost; improve the quality of farm products; and obtain a larger share of the consumer's dollar. Cooperatives face many problems in achieving these objectives.

The research work conducted by Farmer Cooperative Service and the State Experiment Stations is directed toward assisting marketing cooperatives,

as well as other marketing agencies, solve their problems by making available essential factual information and developing practical and useful operating plans and procedures.

#### USDA PROGRAM

The Department conducts a continuing long-range program of basic and applied research and technical assistance on problems of marketing farm products cooperatively. The basic purpose of this work is to help farmers, through their cooperatives, to increase net returns, to improve quality, and to expand markets for their products. Studies are made on problems of organization, operations and the role of cooperatives in marketing farm products. While most of the research is done directly with cooperatives, the results are generally of benefit to other marketing firms.

The work is centered in Washington, D. C. Many of the studies, however, are conducted in cooperation with various State Experiment Stations, Extension Services, and Departments of Agriculture.

Research also is conducted under contract with land-grant colleges, universities, cooperatives and private research organizations. During the period of this report, contract research was performed by Louisiana State University, Texas A & M College, North Carolina State College and two private research companies.

The number of Federal professional man-years on this work totals 24.8. Of this number 1.5 man-years are devoted to cooperative marketing of citrus, 3.0 to cotton, 3.9 to dairy, 2.3 to grain, 3.5 to livestock, .9 to potatoes, 3.6 to poultry, .4 to rice, 1.2 to sheep and wool, .3 to tobacco, 1.7 to vegetables, .3 to sugar and .3 to forestry.

The following lines of work were completed during the period of this report:

Appraisal of the need and feasibility for developing a joint marketing organization for Florida citrus fruit; increasing capacity and decreasing per unit costs of screw press cottonseed oil mills; costs of gin power by type of power in Arkansas, Oklahoma, and Texas with emphasis on cooperative gins; organization structure and operating practices of SWIG (South Western Irrigated Cotton Growers Association, El Paso, Texas); analysis of Oklahoma cotton cooperatives; economic evaluation of multiquart containers; considerations involved in identifying effective dairy cooperatives; factors influencing off-farm grain sales in Missouri and economics of grain drying a local elevators.

Additional work completed included:

Improvement of cooperative livestock marketing through auction and terminal markets; structure and operation of California livestock marketing cooperatives; improving operations and organization of Producers' Livestock Marketing Association and Western Livestock order buyers; Farmer Cooperative Service cooperation in NEM-7, Improvement of market procedures and outlets for northeastern livestock with emphasis on dairy animals; determining costs and factors affecting egg handling costs of selected producer cooperatives; improving the cooperative marketing of eggs and poultry in southeastern Pennsylvania, and appraisals of opportunities for improving the marketing of Eastern Shore, Virginia sweet potatoes by cooperatives and other first handlers.

In addition, 16 case studies of individual or groups of cooperatives were completed. These were concerned with the improvement of operating methods and the feasibility of coordinating the marketing of two or more cooperatives.

#### RELATED PROGRAMS OF STATE EXPERIMENT STATIONS AND INDUSTRY

State Experiment Stations are devoting 6 man-years to research on cooperative marketing. This is divided as follows:

.6 on dairy products in Indiana, Wisconsin and Illinois to study different aspects of the operation of dairy-marketing cooperatives; 1.1 on fruits and vegetables in New Jersey to determine the status and trends of present cooperatives, and in California to determine the characteristics of demand for Calavo avocados; .7 on grains and feeds in Illinois to study the factors responsible for financial success of cooperative grain elevators and the potential market for corn in the Southeastern States, and in Oklahoma to make an analysis of the level and variation in costs of the various inputs in cooperative grain elevators.

The work includes 1.5 on livestock and livestock products in Illinois to study corporate and operating structure of cooperative livestock associations, in Vermont to determine the extent to which farmers feel a need for a cooperative livestock auction or other form of marketing cooperative, and in Montana to study the potential of cooperative livestock feeding and marketing associations; .8 on poultry and eggs in Utah to determine to what extent poultrymen market eggs through cooperatives and what the trend has been in recent years; and 1.3 on tobacco in Kentucky to make a thorough analysis of factors which cause success or failure of tobacco pools.

The research in California, Montana and Utah has been a contribution to the regional project WM-38, "Impacts of Changing Marketing Techniques and Structure on the Organization and Management of Cooperatives."



It is estimated that annual expenditures for research by cooperatives is equivalent to 11 man-years. This includes work on poultry and egg marketing, livestock marketing including analysis of facility needs. Also included is research by farm supply cooperatives such as possibilities for integrated pork and beef programs, cowl pools, consumer acceptance of frozen apple juice and prebaked beans, and feasibility of cooperative marketing of sugar beets.

## REPORT OF PROGRESS FOR USDA AND COOPERATIVE PROGRAMS

### A. Citrus and Subtropical Fruit

1. Coordination of avocado marketing. To provide growers and shippers in the Florida avocado industry with basic information on which to make marketing decisions, a statistical analysis was made of economic relationship affecting the industry's competitive position, including sources of supply, utilization and consumption, distribution of sales, and prices. Recommendations, based on this analysis, related to production and marketing information, advertising and sales, promotion, quality control, and coordination of sales.

2. Improving operating methods. To provide information on methods of improving sales operations, research was conducted on possibilities and problems of various joint sales programs that might be used by fresh citrus shippers in Florida. Interviews with 120 shippers showed that 7 out of 10 saw a need for more joint sales activity. About half of the shippers not affiliated for fresh sales purposes were willing to participate in some form of joint sales activity. Shippers saw market and price stability as the most likely result of more joint sales activity. Independence of shippers was considered to be the chief obstacle to more coordinated sales efforts. The study also pointed out legal obstacles to joint sales efforts that are not grower oriented.

3. Direct marketing to large buyers. To provide growers and shippers with guidelines that will help them adapt to changing marketing conditions, research is underway to determine the nature and extent of large scale buyers' requirements - particularly those made on a specification basis - for Florida fresh citrus.

### B. Cotton and Cottonseed

1. Cost and efficiency of cotton gins. Rising costs of ginning cotton emphasize need of gin owners and managers for information on how ginning costs can be reduced and efficiency increased. One report from the study on power costs showed that the same amounts of electric power costs over twice as much under some rate schedules as under others.

The other report from this study showed that power from natural gas engines generally costs less than from other types of power. But

electric power costs about the same or even less under certain rate schedules and conditions. Suggestions for reducing power costs were to adjust gin operation to rate schedule applying to a specific gin and increasing volumes per gin.

Another study underway will compare cost of ginning cotton on single with multiple gin plants. Findings on this study are not yet available.

Comparative studies were made on costs and efficiencies of cooperative cotton gins to help officials determine inefficiencies so corrective steps can be taken.

2. Cost and efficiency of cottonseed oil mills. Management and members of cottonseed oil mills need information on revenues, costs, and operations to adequately appraise their efficiency of operations. One study completed shows how cottonseed oil mills can increase net revenues by controlling protein level of meal production in the mill grid room rather than the customary method in the press room. The findings of another study completed explained how screw press cottonseed oil mills can increase oil extraction efficiency by not overcooking cottonseed meats before pressing. A third study nearing completion will give cottonseed oil mill operators a guideline on how much chemical lint to remove from seed, under varying linter prices. A published article on one phase of this project showed that power requirements increase at an increasing rate as a higher portion of linters is removed from seed.

Annual comparative studies of costs and efficiencies of active cottonseed oil mills point out inefficiencies so that the mills can take steps to correct them.

3. Improving operating methods of cotton cooperatives. To maximize returns to producers, cotton cooperatives need to continually improve the operations of their gins, oil mills, compresses, and marketing associations.

One study completed is based on 20 years' experience of crushing cottonseed cooperatively. It discusses organizational structure and operating policies and practices that lead to successful operations.

Another study underway will analyze labor saving equipment and operating methods of cottonseed oil mills and make suggestions for their improvement.

A study on the operations of a cotton cooperative in the Texas and New Mexico area, enumerates reasons for its success, gives members a better understanding and appreciation of their association, and will help other groups of cotton growers and producers of other farm commodities find solutions to their marketing problems.



In cooperation with the Extension Services of Texas A & M College, Oklahoma State University, New Mexico State University and regional agricultural agencies, teaching assistance was given to management and office personnel of cooperative cotton gins through bookkeeping schools and conferences for managers. Students taking these courses have greatly improved their bookkeeping and managerial competence.

A report is in process of publication from a study of Oklahoma cotton cooperatives and shows that: (1) Cooperative gins have provided Oklahoma cotton growers with better ginning services and saved them several dollars a bale; (2) the cotton marketing association has provided a more satisfactory market outlet; and (3) the cooperative oil mill has made savings averaging about \$7 per ton for members, since 1944.

### C. Dairy

1. Coordination of marketing. Analysis of four specific proposals for combining operations involving 12 dairy cooperatives was completed and a fifth one involving 2 cooperatives is now underway. Although the studies indicated that advantages of economies of scale would be gained by farmer members, the major reasons for consolidation were to improve farmers' bargaining position and gain market stability. The studies also indicated that most stumbling blocks to joining together were based on non-economic considerations.

A detailed analysis of the economic feasibility of a coordinated marketing program for cooperatives serving major market centers in Tennessee and Kentucky is underway. Preliminary findings indicate substantial savings to farmers through a coordinated system for assembling and manufacturing reserve milk. The study also points to the need for pooling systems to distribute these savings from coordinated marketing to all farmers equitably.

A study of five artificial breeding associations in Pennsylvania considering merger potentialities was completed. Although the study indicated that advantages of economies of scale and of a wider selection of bulls would be gained by farmer members, the primary point cited was the necessity to centralize management skills in order that all Pennsylvania farmers reap the benefit of a higher order of management know-how to be obtained through a merger of the five associations.

2. Pooling and pricing. Case studies of the pooling practices of two dairy associations selling members' milk in a multiple number of Federal Order markets and unregulated markets have been completed. They revealed that cooperatives tend to establish pooling systems that return to members prices competitive with the prevailing prices in the local areas. While repooling procedures may be used to permit all members to share equally in the benefits or burdens from marketing reserve

milk, they did not reblend the value of members' Class I sales between markets.

A survey of the pooling status of dairy cooperatives in all Federal Order markets has been completed. Analysis of these data is not yet completed. Preliminary findings point to the important position played by cooperatives. For example, dairy cooperatives sold almost four-fifths of all milk under Federal Order regulation.

3. Merchandising manufactured products - nonfat dry milk. A study of marketing methods and experience of cooperatives in selling nonfat dry milk to commercial users was initiated. Data have been obtained from both manufacturers and users. Analysis of data has not yet been completed.

4. Improving operating methods and efficiency. A study to develop standards for determining the cooperative character of individual dairy organizations was completed. The publication from this work is designed to help farmers maintain forms of organization and policies of operations of cooperatives that will best serve their needs in obtaining maximum returns and stable markets.

A program for comparing operating costs of manufacturing plants was developed in cooperation with several midwestern cooperatives. Total costs of manufacturing butter and nonfat dry milk for the cooperatives studied ranged from 42.4 cents to 65.6 cents per hundredweight of milk used. Generally, total costs reflected economies of scale. However, the influence of scale of operation varied with different operating practices.

Four case studies of the organizational structure and operations of dairy cooperatives were completed. These studies indicated a need for changes in organizational structure to enable cooperatives to meet the present complex problems in milk marketing.

One case study was made of the feasibility of establishing a small fluid milk packaging plant. The study indicated that under the existing conditions farmers would receive greater returns from continued sales to existing milk plants.

#### D. Deciduous Fruit and Tree Nut

1. Improving operating methods. A case study analysis of a blueberry marketing cooperative pointed out that lack of attention to good management practices had allowed many individual problems to develop in various phases of the total operation. In addition to recommendations on specific problem areas, stress was placed on the need for attention to the management function.



2. Cooperative bargaining. Work is underway to determine some of the effects the bargaining type cooperative has on growers and other segments of the processed fruit and vegetable industry, and to provide guides to growers and others in evaluating the potentials of this marketing method.

#### E. Grain

1. Coordination of marketing. A case study is underway on the feasibility and possibility of combining two local cooperative elevator associations in Iowa. Information is being provided to a number of regional cooperatives interested in establishing river houses and export elevators. Analysis of grain marketing problems in the South is being carried on in cooperation with the Agricultural Experiment Stations in the area.

2. Cost and efficiency of operations. Analysis of data has continued on the study of the cost, volume, size relationships of new country elevators in the Spring Wheat Area (North Dakota). A report will be published next year. Data on the economics of flat storage in Kansas, in cooperation with Kansas State University, are being analyzed and a report will be issued next year. Particularly important are data on weight loss and quality deterioration. In cooperation with Economic Research Service, a study of the economics of grain bank operation is underway. The work is being done by Purdue University under contract and preliminary report should be published next year.

3. Improving operating methods. The problem used in accounting schools for cooperative elevator bookkeepers has been revised and used in six schools in the last two years. An advanced problem has been designed and used in one school. The annual analysis of the financial status and operation of the regional grain cooperatives was continued.

#### F. Livestock

1. Efficiency of pooled sales. Part of the findings of this study were made public in a general publication on livestock pooling. Manuscripts covering feeder cattle and feeder pig pooling operations are completed and ready to go to the printer. Preparation of manuscripts covering lamb and veal calf pooling was started.

A total of 534 market agencies located in 33 States were pooling one or more species of livestock in 1959. Nearly three-fourths of these agencies were operating in the seven-State area of Georgia, Kentucky, Missouri, Ohio, Tennessee, Virginia and West Virginia. Some agencies had been pooling for over 30 years but many started in the 1950's.

Market agencies indicated there were both advantages and disadvantages of pooling to themselves, consignors and buyers. The advantages far outweighed the disadvantages. Pooling reduces the market's operating

costs and helps increase volume. Consignors receive a higher average price for pooled livestock and become better educated on livestock grades and the type and weight of animals buyers prefer. Market agencies estimated that pooling increased prices for feeder pigs from 25 cents to \$7.50 a pig and for feeder cattle and calves from \$1 to \$5 a hundredweight. Pooling allows buyers to buy livestock in large, uniform lots and saves them buying time and expense.

2. Livestock integration. Preliminary information was released on the extent to which producers have integrated the production and marketing of livestock and meat through their cooperatives. Information has been provided to producer groups and cooperatives wishing to start integrated livestock operations.

The success with which a number of cooperatives have integrated their operations indicates there may be some opportunities for other producers to maintain control over their livestock and meat products further toward the consumer.

3. Improved market procedures in the Northeast. FCS has cooperated with the States in the Northeast region to find ways of improving livestock marketing. The findings to date indicate that too many livestock growers fail to sell at markets where price registers might be established. Most of the livestock is purchased by dealers from farmers, then dealers sell to slaughterers.

A second phase in this project studied labor utilization in slaughter plants. The results of this study showed that most slaughterers could lower their labor input per head of livestock handled at their plants.

4. Price differentials for hogs. This study shows that marketing agencies do not use USDA grade and price differentials between the grades to any extent. There are a number of cooperatives that sell hogs on a graded basis but they use their own standards, usually modification of USDA grades. A few agencies secure price differentials of 25-50 cents between grades 1 and 2.

5. Coordination of marketing. Studies have been made to determine the feasibility of livestock marketing cooperatives consolidating and combining operations to become a more important factor in selling of farmers' livestock. Nine cooperatives in the Middle West have joined together to form two organizations. This has increased their volume, overall efficiency, and improved services to farmer members.

In the South, studies have been conducted to determine the possibility of success of a new cooperative livestock market. It was found that the potential of success was present. Also in the Southern area a study to improve operations of a cooperative was carried out. It has been found that improvements can be made in management and services rendered.



6. Improving operating methods. Studies have been completed involving the analysis of the organization, operations and services of livestock cooperatives in California, Wisconsin and the Inter-Mountain States. The findings of these studies have alerted management to those segments of the cooperative that require strengthening to provide better services and to meet changes in marketing and production. The results of these studies not only help the specific cooperative association involved but serve as a guide for other organizations interested either in establishing or improving cooperative livestock marketing agencies. Publications covering this work are in process.

7. Economics of slaughtering and processing livestock. It has been found that cooperative slaughtering and processing plants have the potential of increasing returns to growers. Some areas of the country should consider such plants while in others it appears that they would be uneconomical.

#### G. Oilseeds and Peanuts

1. Marketing farmers' stock peanuts. To evaluate present and possible alternative methods of marketing farmers' stock peanuts in the Virginia-North Carolina area, studies were made of growers' marketing methods, and of the methods and practices of first-buyers. These studies indicated that peanut-buying is generally a part-time operation, integrated with other services; rapid expansion in efficient bulk handling facilities can be expected; and changes in marketing facilities must reflect the high concentration of small sales per farm and growers' lack of transportation and bulk storage facilities. Because of the shift now taking place toward bulk handling of peanuts, a third phase of this research is examining the economies of size and location for bulk handling facilities. This work is being done under contract with North Carolina State College.

2. Efficiency of cooperative soybean processing. Work is continued with cooperative soybean processors in attempting to improve efficiency, reduce costs and increase returns to farmers. The information is discussed in annual meetings of officials of the cooperatives and has been used as a basis for replying to some 15 requests in the past two years from groups interested in getting into soybean processing.

A central sales agency has been organized and incorporated within the last year. Operational procedures are being worked out including the establishment of an office and hiring of personnel.

#### H. Potato

1. Improving operating methods. To provide guidelines to growers on improved methods of marketing their potatoes, work is underway on the

practices and preferences of buyers obtaining supplies from the Eastern Shore of Virginia. This work is being done jointly with the Virginia State Department of Agriculture.

## I. Poultry

1. Costs and efficiency. The objective of this research is to increase the efficiency in egg marketing at the first receiver level. This broad objective was to be achieved by analyzing costs and labor requirements of individual operations in egg handling; by determining and measuring the factors affecting costs and labor output; and by applying findings to actual operating conditions.

The findings show wide variations in costs among the firms studied -- for instance, as much as 60 cents per case candling labor cost and a high egg receiving labor cost six times that of the lowest. The unit direct labor costs varied chiefly because of: (1) Differences in wage rates and other labor costs, (2) differences in unit output per man-hour, and (3) differences in cost of materials and equipment for the candling and cartoning operation. The most important means of lowering egg handling costs are by: (1) Increasing the volume of eggs handled, (2) greater use of labor saving equipment, (3) more efficient use of labor, (4) better plant layout and equipment layout, (5) improving egg quality at farm level, and (6) integrating services.

2. Improving fowl marketing of cooperative and other handlers. The objective of this research is to examine the present fowl marketing situation, and evaluate new and potential ways to increase producer returns from fowl.

The findings to date indicate that: (1) Fowl prices appear unjustifiably low in relation to the food value of fowl; (2) the marketing structure and organization are not generally satisfactory competitively from the producer standpoint; (3) new uses and marketing and merchandising methods are needed; (4) there is need for more and improved market channels and outlets and for more competition at the processing and distribution levels, and (5) more research is needed on the development of new products from fowl of the further processed convenience type.

3. Improving operating methods. Considerable research and service work has been done during the past two years with cooperatives in various States to assist them in their efforts to federate, unify, or consolidate. In California three cooperatives serving egg and poultry producers have recently merged as a follow-up of two studies made in the State regarding the advisability and feasibility of California egg and poultry cooperatives combining. The State Experiment Station conducted related work with the cooperatives.

## J. Rice

1. Rice storage. This research deals with an evaluation of costs and other economic considerations in drying and storing rough rice in on- versus off-farm facilities. It is being conducted on a joint contract basis with Louisiana State University. Information on costs and quality have been obtained from 28 on-farm driers and 19 commercial driers for 3 seasons 1959-60 through 1961-62. Data are now being analyzed by the University.

## K. Sheep and Wool

1. Improving operating methods. Case studies of two wool marketing cooperatives in the Midwest and Southwest have been completed. It was found that the cooperatives could improve their operations and services to growers through new handling methods, use of grading and adoption of latest knowledge of transporting wool. The wool growers would receive better prices if the cooperatives make improvements in appraising and selling on grade descriptions, use better packaging, use hedging or futures markets and advertise the wool to encourage greater competition from more buyers.

2. Analysis of wool pools. Preliminary results of this study indicate that about 34,000 wool growers in 32 States marketed 16 million pounds of wool through 239 local wool pools in 1961. The local pools have been organized by growers to obtain higher prices through increased bargaining power accomplished by having larger quantities of wool available for sale. Pools varied widely in volume of wool marketed depending upon the size of the sheep operations in the areas. Pools in the East, South and Midwest States handled on the average 38,000 pounds or 225 pounds per member, while the Western pools averaged 87,000 or 1,250 pounds per member. Local pools have a variety of problems and related opportunities in fields such as: (1) Capable management and loyal membership; (2) returning prices in line with the merit of individual clips; (3) maximizing competition between marketers; and (4) selling ahead of shearing with over and under tonnage for delivery. A manuscript is being prepared to cover the study of wool pools and their operations in the U. S.

## L. Tobacco

1. Improving operating methods. Work under this project involves an evaluation of effectiveness of farmer-owned loose-leaf tobacco auction associations including methods of operation, suitability of warehouse equipment and facilities, costs and savings. Data from 15 cooperative tobacco auctions are now being analyzed.



## M. Vegetable

1. Improving operating methods. Research study was carried on to provide basic economic information and guidelines for the sales operation of sweet potato growers and their marketing cooperatives on the Eastern Shore of Virginia. Recommendations, based on this analysis, included: (1) Adoption of uniform grade and size standards for both fresh and processing outlets; (2) a more orderly distribution of sales over the shipping season; (3) selling a larger proportion of the fresh crop at the shipping point, rather than the terminal market level; (4) marketing a greater percentage of the total crop cooperatively; and (5) concentrating on fewer but larger buyers in a selected number of markets.
2. Cooperative bargaining. Work is underway to determine some of the effects the bargaining type cooperative has on growers and other segments of the processed fruit and vegetable industry, and to provide guides to growers and others in evaluating the potentials of this marketing method.
3. Improving Florida celery pricing methods. To determine causes for differences in prices paid to growers in Florida as compared with other areas, research is being conducted among celery buyers of major chain store organizations in the Northeast. This work is being done under contract with a private research organization.
3. Improving distribution of dry edible beans and peas by cooperatives. Work is underway to evaluate costs and efficiency in packaging and distribution practices of selected farmer cooperatives. It is being done under contract with a private research firm in East Lansing, Michigan.

## N. Sugar

1. Improving operating methods. There has been increased interest shown by various producer groups in the possibility of acquiring or constructing sugar beet mills. Advisory assistance has been provided in several areas on the feasibility of establishing cooperatively-owned sugar processing facilities. An article is now being prepared on this subject. In general, it will outline the relative merits and problems of a grower-owned plant. It will also provide observations and cost data on the operations of a European cooperative beet association.

## O. Forestry

1. Role and methods of forestry cooperatives. Work is being carried on in cooperation with the Forest Service to determine the role and methods of forestry cooperatives in managing and marketing forest products from small woodlots. Cooperatives, State Foresters, and

Schools of Forestry in the Northeast, Southeast and Midwest were contacted to obtain information and ideas on how cooperatives might be used by small timber producers and to evaluate experience to date in the cooperative marketing of timber. A report is now being prepared.

PUBLICATIONS REPORTING RESULTS OF USDA  
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## AREA NO. 2: COOPERATIVE PURCHASING

Problem: Modern farm operations have greatly expanded the need for production supplies and related farm services. These now represent an annual expenditure of approximately \$4,000 per farm -- an amount equal to half of the farmer's cash farm income. Larger farms and increased productivity of agriculture, coupled with changes in distribution practices and the farflung implications of research, confront the 15,000 cooperatives providing production supplies and farm services with new and expanded opportunities for assistance to farm people.

To do an effective job, however, it is imperative that these organizations adjust to changes in agriculture. For instance, changes in production and distribution patterns for farm supplies mean that many of these items bypass traditional distribution systems and move direct from factory to farm. This calls for increased emphasis on finding the most efficient ways to provide such items. As farms have become fewer, they have also become larger and highly mechanized. Thus, basic operating adjustments must be made by cooperatives in providing the growing number of farm services required, such as pesticide spraying, fertilizer spreading and custom feed mixing, production contracts, credit, custom freezing and processing, fire insurance, irrigation, and electricity.

### USDA PROGRAM

The Department has a continuing long-range program of basic and applied research and technical assistance to help farmers to improve cooperative purchasing of farm supplies and related business services.

Research efforts are directed to improving operating efficiency, increasing savings, strengthening cooperatives' services, and providing the specific quality and type of production supplies that modern farming requires. Attention also is given to the impacts of integration and contract farming on the operations of cooperatives and to problems of organization, pricing, and the growing need for mergers.

The work is centered in Washington, D. C. Many studies, however, are conducted in cooperation with State Experiment Stations, Extension Services and Departments of Agriculture.

Research is also conducted under contract with land-grant colleges, universities, cooperatives and private research firms. During the period of this report contracts were in force with Iowa State University and Duke University.

A total of 10.1 Federal professional man-years is devoted to this work. There are 5.0 in farm supplies, 2.1 in farm services and 3.0 in frozen food lockers.

The lines of work completed during the period of this report are:

Appraisal of the role and operating efficiency of mobile feed milling; evaluation of equipment, methods, and costs in distributing fertilizer and lime in bulk by farm supply cooperatives; analysis of credit policies, practices, and trends in cooperatives distributing farm supplies; analysis of inventory management in cooperatives distributing farm supplies; management problems and practices in the use of reinsurance by farmers mutual fire insurance companies in Southeastern States and study of methods for production credit association financing of patrons of farm supply cooperatives.

The following lines of work also were completed:

Survey of facilities and operations of locker and freezer provisioning plants in the United States; an appraisal of opportunities for improving local food processing and merchandising through locker and related food processing and distributing plants; and development of operating standards, controls, and procedures for frozen food locker plants.

In addition, 8 case studies were completed. These were concerned with improving services and methods of farm supply cooperatives and the feasibility of combining the operations of groups of 2 or more organizations.

#### RELATED PROGRAMS OF STATE EXPERIMENT STATIONS AND INDUSTRY

State Experiment Stations are devoting 2 man-years to this area. This includes research into the factors contributing to the success of farm supply cooperatives to develop guidelines for success in farm supply operations. A Nevada project is exploring potential opportunities in cost reduction through cooperative purchasing; a Louisiana project seeks to develop and test new and alternative models of cooperative purchasing organizations; in Oregon a study is underway to investigate the economics of integrating supply operations of cooperatives toward sources of supply, joint supply operations among cooperatives, scale and type of operation, and the combination of services to be provided and products to be handled; and the Pennsylvania Station is conducting research into the extent and nature of patronage of farmers in cooperative purchasing organizations.

Six regional farm supply cooperatives have formalized economic research departments that conduct research on farm supplies. About half of the projects dealt with market analysis. The remaining work



was directed to studies of the agricultural economic outlook, distribution policies and practices, plant expansion and location, financing, personnel policies, membership relations, and communication methods. Estimated annual expenditures are equivalent to approximately 15 professional man-years.

The National Institute of Locker and Freezer Provisioners and the Industry publication "Freezer Provisioning," occasionally conduct studies among the members of the Institute or subscribers to the trade publication to develop such information as customer attitudes and sales volume. Other studies, such as surveys of labor costs, are undertaken to develop information useful in evaluating the impact of wages and hours legislation on the industry. Approximately one-third professional man-years is devoted to this type research.

#### REPORT OF PROGRESS FOR USDA AND COOPERATIVE PROGRAMS

##### A. Farm Supplies

1. Feed distribution. A study of 12 mobile mills operated by farmer cooperatives in the Middle Atlantic States showed that: (1) Mobile mills must rely on other income in addition to service charges to break even; (2) mill travel must be kept at a minimum and mills must be kept in operation substantially all of the time to be profitable; (3) a second man on the mobile milling operation does not increase feed output significantly; (4) costs of processing feed were from 20 to 25 percent greater per ton in mills with two operators than in mills with only one operator; and (5) the time required to process a batch of feed depends to a large extent on the type of feed processed.

A study of the broiler and turkey feed financing operations of nine large cooperatives throughout the United States indicated that: (1) Most of the broiler feed financing was on a contract basis and most of the turkey feed financing was on a secured, production credit basis; (2) although farmer controlled, cooperatives indicated that both types of financing were handled on about the same manner as those of other feed companies in the areas. Some had special problems, however, because they had various types of farmer-members who shared in net savings or losses, and some regional associations financed feed through member local cooperatives rather than directly with producers; (3) most cooperatives incurred substantial losses on broiler production operations in 1959 and 1960 and reduced financing operations, however, regional advantages affected results; (4) the associations with fairly complete integrated programs usually showed the best overall results with contract programs; and (5) proven credit practices in selection of growers, setting credit limits, taking security, and the like, were just as necessary in cooperatives financing feed to independent producers as in any agency providing

production credit. Total contract feed sales of the associations represented from about 20 to 33 percent of total feed sales. The study indicated that some of the feed financing programs could be improved by more careful selection of producers, use of more concise and clear statements of terms in contracts, providing more complete integrated services, and more careful consideration of the proportion of total assets that should be devoted to financing feed and other supplies for specific enterprises. Similar studies of the financing of feed for egg, replacement pullet, and livestock producers by selected cooperatives were nearing completion.

Another study examined the extent to which farmer cooperatives integrated their feed operations in 1959. It showed that they manufactured about 7 million tons, or 90 percent, of the formula feeds they retailed; delivered 47 percent of their feed to farmers, with 46 percent of this in bulk and 54 percent in sacks; and financed or provided production credit for about one-fifth of the formula feed they retailed. Cooperatives also custom ground and mixed about as much feed as they manufactured on a formula basis.

Work was started on an analysis of methodology for determining the market potential and future trends for various types of commercial feeds in specific areas of the United States.

2. Seed distribution. A study of the seed transporting, handling, and warehousing methods of seven wholesale farmer cooperatives in the Southeast showed that: (1) 51 percent of the seed was clean and 49 percent was rough; (2) 74 percent of the seed receipts of the wholesale cooperatives was received by truck, and 26 percent by rail; (3) relatively little use was made of transit privileges; (4) 49 percent of purchases was made "f.o.b. shipper's warehouse" and 51 percent on a "delivered to regional warehouse" basis; (5) all seeds were moved by truck from wholesale to local warehouses; (6) six associations had equipment for receiving bulk shipments of rough seeds, but only one used a pneumatic elevator and one an auger elevator; (7) several cooperatives could reduce seed handling costs through greater use of advance orders, better truck routing, more direct pooled car shipment, increased use of piggyback transportation to local outlets, adding bulk storage facilities, and expanding production contracting programs with local seed growers.

3. Fertilizer distribution. A study of liquid fertilizer distribution by 17 farm supply cooperatives in the Pacific Northwest showed that: (1) The major types of liquid fertilizer sold were aqua ammonia, nitrogen solutions, and liquid mixtures; (2) facilities consisted of bulk tanks with a capacity of 15,000 gallons, nurse tanks with a capacity of from 650 to 1,500 gallons, and applicators; (3) services offered were: renting application equipment to farmers, applying the fertilizer, soil testing, and repairing farmers' equipment; (4) sales



averaged \$76,000 per association with substantial savings usually realized; (5) 10 associations reported that liquid fertilizer had little effect on sales of dry fertilizers; and (6) operations could be improved by maintaining separate records on liquid and dry fertilizer operations, providing more application services, emphasizing information programs, offering more soil testing services, and adhering more closely to safety precautions.

4. Distribution of pesticides and other farm supplies. Research on the use and distribution trends of pesticides in the South showed that: (1) The pesticide market is rapidly expanding and may be expected to expand substantially more by 1970; (2) the use of herbicides is increasing more rapidly than insecticides; (3) a larger proportion of pesticides was being formulated as liquids rather than solids; (4) there is a trend toward more direct distribution from formulators to farmers; and (5) in 1960 farmers in the South bought about 16 percent of their pesticide needs through cooperatives.

Fifteen lawn and garden operations of cooperatives in the East, where considerable farm land was changing to industrial and residential uses, were studied to obtain information on their facilities, practices, problems, and benefits to farm supply cooperatives. Although lawn and garden services were new in most associations, they helped to maintain volume, keep overhead costs reasonable, and continue services to farmers in areas where farm supply volumes were declining; and they resulted in wholesale and retail savings on lawn and garden items in some stores. Alternatives available to farm supply cooperatives were to operate such stores in suburban areas until the associations relocate, merge, or liquidate; gradually transfer ownership to suburban patrons; or operate full-fledged lawn and garden stores in suburban areas, with the net margins going to all farmer-members of the cooperative. A number of essentials were determined for the successful operation of lawn and garden stores. The report has been edited but not processed.

Data assembled from regional cooperatives in the United States showed that they distributed about 1.5 billion gallons of gasoline, 0.9 billion gallons of heating fuels, and 0.1 billion gallons of other liquid fuels in 1961. Gasoline declined in importance from 68 percent to 59 percent of the total, while fuel oils increased from 15 percent to 37 percent of the total. Other liquid fuels declined from 17 percent to 4 percent of all fuels.

5. Container procurement and handling for fruits and vegetables. The operations of two regional cooperatives--one manufacturing and the other providing wholesale purchasing services for local citrus and vegetable marketing cooperatives in Florida-- were studied. The methods used by several local associations in buying and transporting containers also were analyzed. This work served as the basis for



developing a mail questionnaire to go to all local marketing cooperatives in the State and for a detailed personal interview questionnaire for use with selected associations.

6. Improving operating methods. Findings of a study of the farm supply operations of cooperative elevators and gins in Texas showed that some of the major advantages of marketing cooperatives handling farm supplies were: (1) More efficient use of labor; (2) spreading of overhead costs; (3) increased volume, and (4) worthwhile savings on production supplies. A list of essentials for the successful handling of farm supplies was developed. The association had average supply sales of \$193,000, with petroleum and fertilizer accounting for 43 and 37 percent respectively. They had average gross margins of 16.8 percent, expenses of 14.4 percent, and net operating savings of 2.4 percent of sales.

Information from 25 regional cooperatives indicated a definite interest in the possibility of providing farm management services to patrons. They also believed that they could improve their farmer advisory service by better coordination of commodity fieldmen.

An intensive business and organizational study of a regional farm supply and marketing cooperative indicated the importance of keeping facilities modern and policies and operating practices keyed to changing conditions and size of farm operations. Findings showed that conditions which can lead to high costs, loss of member support, and a decline in net margins are: Failure to build a modern mill with bulk delivery service; failure to sell old mill and warehouse and relocate in lower cost areas; slowness in consolidating branches; and lack of pricing policies which reflect differences in costs of serving farmers with different sized purchases.

Summaries of six area studies of credit control and inventory management, prepared for review, contained standards and suggestions for improvement by farm supply cooperatives. Also a study, nearing completion, showed how selected farm supply cooperatives were working closely with production credit associations and other credit agencies. These findings are reported by the Farm Services Branch in the following sections of this report.

Data for a report on the organizational structure, sales, facilities, financial structure, net margins, and revolving of member equities of 23 major regional cooperatives for their 1960 and 1961 fiscal years were obtained and tabulated.

Field data were partially assembled at the end of the period for a study of the organizational setup, services, facilities, operating practices, and financial condition and benefits of a State-wide wholesale cooperative and its local member associations in the East.

Findings should be helpful to other cooperatives in determining ways of improving services, operating efficiency, coordinating manufacturing, wholesaling and retailing operations, and reducing costs of supplies to farmer-members.

## B. Farm Services

1. Mutual insurance. A study of the operations of the Farmers Mutual Fire Insurance Association of North Carolina has been completed, the results published and made available to farm mutual insurance companies in North Carolina and other States. This report points up three factors that have had a noticeable effect on the growth rate of this organization and its various branches. It showed that successful operation was closely associated with: (1) writing "maximum risks" of at least \$10,000, (2) providing windstorm coverage, and (3) operating with an assessment rate that is less than 50 cents per \$100 for the best type of farm dwelling. The report recommends the use of reinsurance where needed to spread the risk and enable the amount and type of insurance needed by members, and suggests three methods of obtaining such reinsurance. The results of this study will have application not only in North Carolina but other States as well.

2. Rural credit unions. A study of rural credit unions in 9 Mid-western States shows that these organizations provide an effective means of encouraging members to accumulate cash reserves and that such reserves, when available, are used by cooperative patrons to pay for farm supplies purchased at cooperative stores, thus reducing the need to buy on credit. The study shows also that a regional wholesale cooperative can give effective assistance to its member cooperative in the organization of credit unions by providing technical "know how", and legal assistance. One phase of this study has been completed, results published and distributed. These findings will be of assistance to officers of cooperatives in deciding whether or not to sponsor a program of credit unions among their members.

3. Production services. Work underway includes a study of the relatively new program under which cooperatives and production credit associations work together in financing purchases of farm supplies by members of cooperatives. This program is now in its fourth year. The study shows that the program is now operating in eight Farm Credit Districts and 35 States. Amount of loans outstanding at the end of 1961 was approximately \$12 million. The study shows that the program works best when the cooperative adopts a strict credit policy, also where there is frequent contact and close cooperation between the PCA and the cooperative. The field work on this study has been completed and a report of the findings is now being prepared.



### C. Frozen Food Lockers

1. Cost and efficiency of operations. Development of cost control techniques for frozen food locker and related plants: - Adequate and appropriate accounting procedures for guiding management of small processing plants have been needed for many years. Under contract, Duke University has developed a management accounting system that sets forth the more important cost areas of operation and techniques to control them. The system has been tested and found suitable for use in small processing plants.

Survey of facilities and operations of locker and freezer provisioning plants: - A survey of the frozen food locker and freezer provisioning industry is made every five years to determine changes and trends. The 1960 survey showed an increase of 1.4 million patrons served; an increase of 200 million pounds of food processed; and a 100 percent increase in volume of frozen food sold. Total industry sales reached \$845 million in 1959.

Developing methods and data frozen food locker and related small processing firms need for improving facilities planning and product handling: - A contract has been signed with Iowa State University and the work is just getting underway.

An appraisal of facilities and operations of frozen food locker cooperatives: - Cooperatives comprise between 5 and 6 percent of the locker and freezer provisioning industry. Locker cooperatives continue to emphasize custom services in contrast to the industry trend of more commercial processing and merchandising. This emphasis is reflected in sales which average about one-third the average for the entire industry.

Annual report of frozen food locker plants in the United States: - This study provides basic information on the number of firms in the locker and freezer provisioning industry at the beginning of each year. At the beginning of 1961 there were 10,365 firms, an increase of 490 over the previous year. The increase is due to the increasing number of firms that are organized to serve homefreezer owners.

2. Merchandising methods. Merchandising methods of frozen food locker and related plants: - Merchandising is a broad area of growing importance to locker and freezer provisioners. Efforts were successful in compiling some needed information on four basic areas of merchandising -- credit, delivery, membership and advertising. This effort turned up other areas that needed investigation.

An appraisal of the influence of credit upon sales volume in locker and freezer provisioning organizations: - Credit is a powerful merchandising tool. Locker and freezer provisioners extending installment



credit had average sales of \$163,400 compared with \$85,500 for the entire industry. Companion work is underway to examine relations among cash sales, open account sales and installment sales in a limited number of firms.

3. Improving product handling and operating practices. The role and methods of locker and related processing cooperatives in processing and merchandising locally-produced food products: - Need for this kind of study is great in light of the changing nature of the locker and freezer provisioning industry. The work is just getting underway.

Frozen food locker plants in a national emergency: - This Branch has worked closely over the years with other Government agencies to provide them with information about the locker and freezer provisioning industry that would help them plan for any national emergency. Among these agencies have been Office of Price Stabilization, Office of Defense Mobilization, Office of Civil Defense, Office of Civil and Defense Mobilization, Office of Emergency Planning, Food and Materials Requirements Division, Commodity Stabilization Service, and Defense Services Staff, Agricultural Stabilization and Conservation Service.

General information on number of plants, location and processing and storage capacity has been furnished along with specific information on cubic feet of gross refrigerated space and standby power equipment. Information of this nature is provided each time a survey of the industry is made.

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### AREA NO. 3: COOPERATIVE ORGANIZATION, MANAGEMENT AND TRANSPORTATION

Problem: Cooperatives are confronted to an ever increasing extent with the problems involved in improving their organization structures, the skill and capacity of their managements, and the degree to which membership participation and support can be further developed. In addition, they are faced with the problems of rising transportation costs and demands for improved transportation services on the products they sell and the farm supplies they acquire and handle for their members.

As cooperatives become larger and more complex the problem of maintaining effective membership relations becomes still more important and more difficult. It is vital that the communication network within cooperatives among members, directors and employees serve effectively. Only then can the cooperative aspects of the business enterprise be fully maintained and utilized.

Cooperatives are becoming more diversified, especially in combining activities involving marketing, farm supplies and farm services. Information is needed regarding the rates of change and trends in order that cooperative planning and assistance to cooperatives may be based on more detailed knowledge of changes and trends taking place and in prospect.

Farmers look to their cooperatives to provide them with adequate transportation at low cost. There is need to develop methods for reducing product losses in transit; to explore alternate methods of handling and transportation; to improve utilization and efficiency of traffic management services; and to determine costs, scope of operation and economic importance of privately operated motor trucks, if farmer cooperatives are to meet the transportation requirements of their members.

### USDA PROGRAM

The Department has a continuing long-range program of basic and applied research and technical assistance to help farmers strengthen the organization structures of their cooperatives, improve their management, build effective membership relations, and develop and maintain efficient cooperative transportation services. Studies are made on financing methods, managerial and director functions, cooperative trends, membership attitudes and communication and transportation methods and costs.



The work is centered in Washington, D. C. Many of the studies, however, are conducted in cooperation with various State Experiment Stations and Extension Services, and Departments of Agriculture.

Research also is conducted under contract with land-grant colleges, universities, cooperatives and private research organizations. During the period of this report, contract research was performed by Iowa State College.

A total of 10.2 Federal professional man-years is devoted to this work. Of this amount, 3.6 is for work on organization and management of cooperatives, 3.0 on membership relations and 3.6 on transportation.

The following lines of work were terminated during the period of this report:

Employee incentive payment plans for farmers' marketing and purchasing cooperatives; trends in the growth of farmer cooperatives; trends in the production, processing and distribution of petroleum products by farmer cooperatives; trends in the production and distribution of dairy products by farmer cooperatives; evaluation of communication processes in farmer cooperatives; revision of FCS Circular C-135 "The California Fruit Growers Exchange System"; strengthening member relations of federated marketing cooperatives; and methods of treating large and small volume patrons of cooperatives fairly.

Other lines of work completed include:

Economic appraisal of transportation and related costs in marketing processed poultry and eggs and distributing poultry feed by cooperatives and other selected handlers in the North Central States; relation of specific handling practices and conditions to loss and damage to cattle and hogs in transit; relation of specific handling practices and conditions to loss and damage to hogs and sheep in transit from farms and processing plants; and leasing versus ownership of private motortrucks by cooperatives.

In addition, 8 case studies of cooperatives were completed. These dealt with accounting procedures, organization methods, membership structure, transportation and facility location problems, and the coordination of 5 artificial breeding cooperatives.

#### RELATED PROGRAMS OF STATE EXPERIMENT STATIONS AND INDUSTRY

State Experiment Stations are devoting 9.5 man-years to work in this area. This includes periodic studies to determine the role being played by cooperatives in the marketing of farm commodities and the purchasing of farm supplies in their particular state. Currently the experiment stations are giving considerable attention to the

adjustments in organization which cooperatives must make in view of recent and prospective changes in market structure. The current research program deals also with the management problem of cooperatives, including the problem of finding a good manager and of developing competent leadership. Problems of membership relations are being studied under different farming conditions and in connection with different types of cooperative operations. Research is currently going on to determine the merits of various forms of financial organization and management.

Traffic and transportation departments of several farmer cooperatives are engaged in motortruck operating cost studies and studies of alternative methods of product handling and transportation. Estimated annual expenditures are equivalent to approximately 3 professional man-years.

## REPORT OF PROGRESS FOR USDA AND COOPERATIVE PROGRAMS

### A. Organization and Management

1. Financing methods. A nationwide survey of the capital structure of all farmer marketing, farm supply, and related service cooperatives listed with Farmer Cooperative Service is underway. A detailed analysis will be made to determine the relationship between size, type and diversity of operations, and the sources and adequacy of equity and borrowed capital used to finance operations. Analyses will also be made of the sources and amounts of borrowed capital available to cooperatives both at the time of their peak financial requirements and at their fiscal year-end dates. The survey will also furnish information about distribution of net margins and the Federal income tax status and payments made during the fiscal period reported.

2. Management and director functions. A study of the use and effectiveness of board committees as a tool of management indicated that committees are useful both as decision-making bodies and as a source of advice to boards of directors and hired management. It revealed also that responsibilities of committees can be of a very broad and general nature or of very limited and narrow scope. The report also furnishes insight into the kinds of assistance marketing and farm supply cooperatives request from professional management consultant firms.

A manual in guidebook form is under preparation for use of managers and directors. Its primary purpose is to show how management principles can be used to achieve success for cooperative associations.

A study of the internal control procedures of a multi-product dairy processing cooperative made suggestions and recommendations concerning its financial and product accounting methods; its organization plan and the delegation of responsibilities under the suggested plan; and the preparation of management reports as a method of measuring results against reasonable expectations.



Case study analyses of a dairy processing cooperative and a soybean processing cooperative resulted in suggestions for changing membership structure and producer representation procedures.

3. Personnel practices. The analysis of employee incentive plans used by five midwestern farmer cooperatives has been completed. The study provides a realistic basis for study and application by managers and directors interested in installing incentive programs in their own cooperative or in improving plans already in operation.

4. Methods of merging or consolidating cooperatives. A study of five artificial breeding associations in Pennsylvania considering merger potentialities was completed. Although the study indicated that advantages of economies of scale and of a wider selection of bulls would be gained by farmer members, the primary point cited was the necessity to centralize management skills in order that all Pennsylvania farmers reap the benefit of a higher order of management know-how to be obtained through a merger of the five associations. 1/

A case study is now underway of two Ohio artificial breeding cooperatives to explore merger possibilities.

5. Cooperative integration. One study analyzed the types and extent of integrated petroleum services provided for farmers by their cooperatives in 1957 and compared them with similar services in 1950. The information was collected from 36 regional cooperatives that handled petroleum products and served over 2,200 local associations.

Another study of cooperative integration analyzed operations of 1,557 dairy cooperatives in 1957. It provided information on the quantities of products and functions performed by these cooperatives at the four major levels of operation. These are receiving and bargaining; manufacturing; distributing at wholesale; and distributing at retail.

A third study just completed developed information on the integrated feed operations of 4,232 cooperatives that handled feed for their patrons in 1959. In that year, 821 cooperatives operated 1,054 mills that produced a little more than 7 million tons of formula feeds.

A total of 168 cooperatives distributed at wholesale almost 6 million tons of feed. Cooperatives operated 5,310 local feed stores and warehouses through which they distributed at retail almost 12 million tons of feed. Formula feeds accounted for a little more than 7.8 million tons of this volume.

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1/ This work is also reported in Area No. 1 - Dairy - page 6.



Cooperatives delivered to farmers about 47 percent of the total volume of feed they retailed, with 46 percent of these deliveries in bulk form. They financed through various programs about one-fifth of the total volume of formula feed they retailed.

6. Cooperative trends. Statistical information supplied by marketing, farm supply, and related service cooperatives on their business volumes and memberships in the 1959-60 period indicated a continuing upward trend in total dollar volume, a decrease in memberships, and a continuation of the downward trend in the total number of cooperatives.

The total gross value of farm products marketed, farm supplies handled, and receipts for services performed by cooperatives amounted to more than \$15.6 billion. This represented an increase of 2.7 percent over the \$15.2 billion in 1958-59. Total net volume, after eliminating duplication resulting from inter-association business, amounted to more than \$12 billion. This was an increase of more than 2.4 percent over the previous year.

The total number of cooperatives decreased to 9,345 from 9,658 in the previous year. Many of the discontinuances in the period covered by the survey resulted from reorganizations that included mergers, consolidations, and acquisitions.

#### B. Membership Relations

1. Appraising member and nonmember attitudes and participation. This research seeks to identify factors which motivate member loyalty and to learn the most effective way to use them. During the period under review, three studies in the above general area were completed, another three were started but not completed.

Findings of the study of a federated citrus marketing cooperative (Sunkist Growers, Inc.), were that it had continued to serve members effectively because of its adherence to five basic principles:

(1) Encouragement of member participation in association affairs; (2) pooling of costs, products and returns; (3) constant research to find better methods of production, operation and selling; (4) encouragement of adequate capital contributions from members; and (5) willingness to change with changing times-flexibility.

Findings of a study of the manner in which selected cooperatives adjusted operating margins between large and small volume patronage indicated that cooperatives were increasingly adjusting charges for services rendered to conform more closely to the actual cost of providing the service, rather than making uniform charges regardless of volume handled for individual members.

Findings of a third study to analyze the effectiveness of the member relations program of a federated marketing cooperative were that farmer patronage was positively related to extent of participation in, and knowledge of, association affairs.

Of those studies started but not completed, two seek to measure how well cooperative information programs encourage member patronage and participation. The third study will measure the effectiveness of member contracts in securing patronage and participation.

2. Improving communication with members. Research in cooperative communication seeks to find ways of keeping communication channels open and effective. A study was completed of the communication channels in a representative local association. Findings of the study were that there exist within the typical cooperative four elements generating communication. These elements were: Members, directors, key management personnel, and other employees. The efficiency of the cooperative depended on the free two-way flow of information, both within and between these four elements. The channels could be kept open and effective by conscious effort to that end by management.

Work continued in this area on development of a teaching guide to be used by vocational agriculture instructors and others interested in teaching about farmer cooperatives.

Work also continued on a review of meeting techniques leading to the organization and conduct of a continuing series of regional and national member relations conferences for cooperative leaders. During the period under review, seven regional and four national conferences were organized.

### C. Transportation

1. Loss and damage to agricultural products in transit. Farmers and their marketing agencies incur millions of dollars of loss each year due to damage and loss associated with the movement of agricultural products from producing areas through the marketing process to final destinations. Such losses must be borne, in part, by one or more segments of the industry.

Studies of livestock loss and damage in transit were completed and three reports of findings were released during the period. Principle findings of a study of loss and damage in handling and transporting hogs include: (1) Loss and damage to hogs associated with handling and transportation in marketing and processing are estimated to be \$22.6 million a year; (2) the largest loss due to bruising was in hams, followed by bellies and shoulders, in that order; and (3) truck losses exceeded rail losses by \$8.07 per hundred head.

Principal findings of a study of losses from handling sheep and lambs are: (1) Losses occurring at the market level during transporting and handling sheep and lambs amount to almost \$2 million a year; (2) abusive handling was a principal contributor to loss and damage; and (3) improving the handling of sheep and lambs during marketing and processing could reduce loss and damage and result in increased income to the various segments of the industry.

A report outlining methods for safety-checking handling facilities to reduce livestock losses was published. According to the report, factors to be considered in evaluating a livestock handling facility include: (1) Weather; (2) species of animal; (3) capacity of facility; and (4) handling personnel. Methods for evaluating the physical makeup of the facility including condition and design of railings, fences, alleys, pens, chutes, docks, gates, scales and feeding facilities are included in the report.

Detailed data have been collected on 10,000 cars of grain covering a 2½-year period from 75 country and 6 terminal elevators regarding loss and damage in transit. Data on loss records and equipment are also being assembled on barge shipments of grain from eight grain elevators located on the inland waterways.

2. Motortruck operations and costs. Little information is available on costs, scope of operations, services and economic importance of motortrucks operated by farmer cooperatives. The scope and extent of the movement of agricultural products by private motor carriers, including farmer cooperatives is one of the important remaining gaps in transportation statistics.

Preliminary findings of a study of 6,100 farmer cooperatives include the following: (1) Farmer cooperatives own or lease an estimated 33,000 motortrucks; (2) only 28 percent of the total truck mileage reported by the cooperatives involved hauls other than local pickup and delivery and movements from fields to local concentration points. Thus, the great majority of their truck operations are local in nature.

A report of findings was released on a study of advantages and disadvantages of motortruck leasing. The report also outlines general guides and principles to be considered by management of a firm in determining whether to lease or purchase motortrucks.

A compilation of State regulations pertaining to the intrastate operations of motortrucks by farmer cooperatives is nearing completion.

3. Appraisal of alternative methods of product handling and transportation. Changes in marketing and distributing methods for agricultural products have been accompanied by changes in demand for transportation and handling facilities and services.



Collection and analysis of data on a study to appraise possibilities of reducing wool transportation costs by analyzing alternative methods of transporting and handling wool and determining advantages of establishing wool baling and scouring facilities near the source of production are completed. A report of findings is being prepared by the contractor, Texas Transportation Institute, College Station, Texas.

Preliminary analysis indicates there are possibilities in specific areas for reducing transportation costs on wool by locating scouring facilities near the source of production. The report of findings will include detailed data on traffic flow patterns on grease and scoured wool, as well as comparative transportation costs and services. A suggested size standard for wool bales has also been developed as part of the study.

4. Traffic management in farmer cooperatives. Less than 300 of the over 9,200 farmer cooperatives in the United States have traffic departments. Yet, over 2 million farmer members of cooperatives depend on these associations to provide them with adequate transportation at low cost to maximize returns on farm products marketed.

A questionnaire was mailed to the over 9,200 farmer cooperatives. Over 6,000 farmer cooperatives replied to the questionnaire and indicated whether they had full or part-time traffic management service.

Preliminary findings based on partial analysis of data indicate the following:

1. Less than 10 percent of the cooperatives reporting had anyone devoting full or part-time to transportation management.
2. Only about two percent of the cooperatives had anyone devoting full time to transportation management.
3. There is a direct relationship between size of firm and transportation management. Two-thirds of the largest cooperatives reporting in the \$10 million and above annual business category had full-time transportation management.

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Line Project Check List -- Reporting Years October 1, 1960 to September 30, 1962

| Work & Line Project Number | Work and Line Project Titles                                                                                                                                                  | Work Locations During Past Year                                                                                           | Line Project Incl. in        |                   |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------|
|                            |                                                                                                                                                                               |                                                                                                                           | Summary of Progress (Yes-No) | Area & Subheading |
| a-1-1                      | Research, service and educational assistance for cotton and oilseeds cooperatives                                                                                             |                                                                                                                           |                              |                   |
| a-1-1-1<br>(Rev.#2)        | Advisory and educational assistance on current organizational and operational problems of cotton marketing cooperatives                                                       | N.Mex., Calif.,<br>Ariz.,Tex.,Ark.<br>Okla., Miss.,<br>Wash., D. C.                                                       | Yes                          | 1-B               |
| a-1-2                      | Research, service and educational assistance for dairy cooperatives                                                                                                           |                                                                                                                           |                              |                   |
| a-1-2-10<br>(Rev.)         | Advisory and educational assistance to dairy cooperatives on their problems relating to organization, operations, procedures and policies                                     | Iowa, S. Dak.,<br>Wash., D. C.,Va.<br>Ky., Ind., Tenn.<br>Wyo.,Fla., N. Y.<br>W.Va., Md.,Ariz.                            | Yes                          | 1-C               |
| a-1-3                      | Research, service and educational assistance for frozen food locker cooperatives                                                                                              |                                                                                                                           |                              |                   |
| a-1-3-4<br>(Rev.#2)        | Frozen food locker and freezer provisioning plants in a national emergency                                                                                                    | Wash., D. C.                                                                                                              | Yes                          | 2-C               |
| a-1-3-5<br>(Rev.)          | Annual report of frozen food locker and related processing plants in the United States                                                                                        | Wash., D. C.                                                                                                              | Yes                          | 2-C               |
| a-1-3-6<br>(Rev.)          | Advisory and educational assistance on current organizational and operational problems of frozen food locker cooperatives and related food processing and distributing plants | Wash., D. C.                                                                                                              | No                           | 2-C               |
| a-1-3-8                    | An appraisal of the facilities and operations of frozen food locker cooperatives                                                                                              | Wash., D. C.                                                                                                              | Yes                          | 2-C               |
| a-1-3-9                    | The role and methods of locker and related processing cooperatives in processing and merchandising locally produced food products                                             | Wash., D. C.<br>Va.                                                                                                       | Yes                          | 2-C               |
| a-1-4                      | Research, service and educational assistance for fruit and vegetable cooperatives                                                                                             |                                                                                                                           |                              |                   |
| 1-4-15<br>(Rev.)           | Advisory and educational assistance to fruit, vegetable, and nut cooperatives on organizational and operational problems                                                      | Calif., Fla.,<br>Idaho,Ill.,La.,<br>Maine,Md.,Mich.,<br>Minn.,Mo.,N.J.,<br>N.Y.,N.C., Ohio,<br>Oreg., Texas<br>Va., Wash. | Yes                          | 1-A-D-H<br>M      |
| a-1-4-17                   | Scope and potentials in marketing fruits, vegetables, and nuts by cooperatives                                                                                                | Wash., D. C.                                                                                                              | Yes                          | 1-A-D-H<br>M      |
| a-1-5                      | Research, service and educational assistance for grain cooperatives                                                                                                           |                                                                                                                           |                              |                   |
| a-1-5-5<br>(Rev.)          | Comparative operating efficiency of regional grain cooperatives                                                                                                               | Wash., D. C.                                                                                                              | Yes                          | 1-E               |
| a-1-5-8<br>(Rev.)          | Accounting exercises for cooperative grain elevator personnel                                                                                                                 | Wash., D. C.                                                                                                              | Yes                          | 1-E               |
| a-1-5-10                   | Comparative operating efficiency of cooperative soybean oil mills                                                                                                             | Wash., D. C.                                                                                                              | Yes                          | 1-E               |
| a-1-6                      | Research, service and educational assistance for livestock and wool cooperatives                                                                                              |                                                                                                                           |                              |                   |
| a-1-6-12<br>(Rev.)         | Operations and organization of the National Wool Marketing Corporation and affiliated State and regional wool marketing cooperatives                                          | Wash., D. C.                                                                                                              | Yes                          | 1-F               |
| a-1-6-13                   | Improvement of cooperative livestock marketing in Illinois                                                                                                                    | Illinois                                                                                                                  | Yes                          | 1-F               |

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| Work & Line Project Number | Work and Line Project Titles                                                                                                                             | Work Locations During Past Year                                             | Line Project Incl. in Summary of Progress (Yes-No) Area & Subheading |     |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|----------------------------------------------------------------------|-----|
|                            |                                                                                                                                                          |                                                                             |                                                                      |     |
| a-1-6-14                   | Structure and operation of California live-stock marketing cooperatives                                                                                  | California                                                                  | Yes                                                                  | 1-F |
| a-1-6-15                   | Improving operations and organization of Producers' Livestock Marketing Association and western livestock order buyers                                   | Intermountain States                                                        | Yes                                                                  | 1-F |
| a-1-6-16                   | Organization and operations of local wool pools                                                                                                          | United States                                                               | Yes                                                                  | 1-F |
| a-1-6-17                   | Advisory and educational assistance to live-stock and wool cooperatives on their problems relating to organization, operations, procedures, and policies | United States                                                               | Yes                                                                  | 1-F |
| a-1-7                      | Research, service and educational assistance for poultry cooperatives                                                                                    |                                                                             |                                                                      |     |
| a-1-7-12 (Rev.)            | Advisory and educational assistance to poultry cooperatives on their problems relating to organization, operations, procedures and policies              | Calif., Minn., Pa. N.J., Utah                                               | Yes                                                                  | 1-I |
| a-1-8                      | Research, service and educational assistance for cooperatives handling special crops                                                                     |                                                                             |                                                                      |     |
| a-1-8-5                    | Advisory and educational assistance on organizational and operational problems of special crops cooperatives                                             | Wash., D. C.                                                                | Yes                                                                  | 1-N |
| a-1-8-6                    | Evaluation of the effectiveness of farmer-owned looseleaf tobacco auction associations                                                                   | N.C., Va., Tenn. Ky., Mo., Ga.                                              | Yes                                                                  | 1-L |
| a-1-8-7                    | The role and methods of forestry cooperatives in improving the management and marketing of forest products from small woodlots                           | N.Y., Conn., Mass. Pa., W.Va., Md., Ohio, Ind., Ky., Miss., La., Mich. Wisc | Yes                                                                  | 1-O |
| a-1-9                      | Research, service and educational assistance for farm supplies cooperatives                                                                              |                                                                             |                                                                      |     |
| a-1-9-9 (Rev.)             | Annual information on organizational features, operations, and services of major regional farm supply cooperatives                                       | Wash., D. C.                                                                | Yes                                                                  | 2-A |
| a-1-9-18 (Rev.)            | A summary analysis of the operations of small regional cooperatives handling farm supplies                                                               | Wash., D. C.                                                                | No                                                                   | 2-A |
| a-1-9-25 (Rev.)            | Advisory and educational service on current organizational and operational problems of farm supply cooperatives                                          | Miss., Ark., Utah, Pa., Mass., N.J., Kans., Wash., D.C. Va.                 | Yes                                                                  | 2-A |
| a-1-9-26                   | Evaluating equipment, methods and costs in distributing fertilizer and lime in bulk by farm supply cooperatives                                          | Pacific N. W.                                                               | Yes                                                                  | 2-A |
| a-1-9-28                   | Analysis of credit policies, practices & trends in cooperatives distributing farm supplies                                                               | Wash., D. C.                                                                | Yes                                                                  | 2-A |
| a-1-9-29                   | Analysis of inventory management in cooperatives distributing farm supplies                                                                              | Wash., D. C.                                                                | Yes                                                                  | 2-A |
| a-1-9-30                   | Analysis of lawn and garden services provided by farm supply cooperatives                                                                                | Va., N.Y., N.J., Ohio                                                       | Yes                                                                  | 2-A |
| a-1-9-31                   | Analysis of farm supply operations of cooperative gins and elevators                                                                                     | Texas                                                                       | Yes                                                                  | 2-A |
| a-1-10                     | Research, service and educational assistance for farm services cooperatives                                                                              |                                                                             |                                                                      |     |
| a-1-10-4 (Rev.)            | Advisory and educational assistance on current organizational and operational problems of farm business service cooperatives                             | Wash., D. C.                                                                | No                                                                   | 2-B |



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| Work & Line Project Number | Work and Line Project Titles                                                                                                          | Work Locations During Past Year                                                                            | Line Project Incl. in        |                   |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|------------------------------|-------------------|
|                            |                                                                                                                                       |                                                                                                            | Summary of Progress (Yes-No) | Area & Subheading |
| a-1-10-5                   | Appraising the effectiveness of rural credit unions                                                                                   | Ind., Kans.                                                                                                | Yes                          | 2-B               |
| a-1-10-6                   | Management problems and practices in the use of reinsurance by farmers' mutual fire insurance companies in southeastern states        | North Carolina                                                                                             | Yes                          | 2-B               |
| a-1-10-7                   | Study of rural health cooperatives                                                                                                    | Wash. D. C.                                                                                                | No                           | 2-B               |
| a-1-10-8                   | Study of methods for Production Credit Association financing of patrons of farm supply cooperatives                                   | Ind., Ohio, Mo., Ill., Minn.                                                                               | Yes                          | 2-B               |
| a-1-11                     | History and Statistics of cooperation                                                                                                 |                                                                                                            |                              |                   |
| a-1-11-1<br>(Rev.#2)       | Annual statistical survey of farmer marketing, farm supply and related service cooperatives                                           | Wash., D. C.                                                                                               | Yes                          | 3-A               |
| a-1-11-2<br>(Rev.)         | Maintenance of file on cooperative source material                                                                                    | Wash., D. C.                                                                                               | No                           | 3-A               |
| a-1-11-3                   | Trends in the growth of farmer cooperatives                                                                                           | Wash., D. C.                                                                                               | No                           | 3-A               |
| a-1-11-4                   | Service and educational assistance in developing and disseminating historical and statistical information on agricultural cooperation | Wash., D. C.                                                                                               | No                           | 3-A               |
| a-1-11-5                   | Farmers' equities in marketing, farm supply and related service cooperatives                                                          | Wash., D. C.                                                                                               | No                           | 3-A               |
| a-1-11-6                   | Trends in the production, processing and distribution of petroleum products by farmer cooperatives                                    | Wash., D. C.                                                                                               | Yes                          | 3-A               |
| a-1-11-7                   | Trends in the production and distribution of dairy products by farmer cooperatives                                                    | Wash., D. C.                                                                                               | Yes                          | 3-A               |
| a-1-11-8                   | Current feed manufacturing and distribution by farmer cooperatives                                                                    | Wash., D. C.                                                                                               | Yes                          | 3-A               |
| a-1-12                     | Research, service and educational assistance on business administration problems of cooperatives                                      |                                                                                                            |                              |                   |
| a-1-12-9                   | Employee incentive payment plans for farmers' marketing and purchasing cooperatives                                                   | Wash., D. C.                                                                                               | Yes                          | 3-A               |
| a-1-12-14                  | Advisory and educational assistance on current organizational and operational problems of cooperatives                                | Va., Pa., Minn., Mo.                                                                                       | Yes                          | 3-A               |
| a-1-12-15                  | Adjusting farmer cooperatives to the impacts of integration in production and distribution                                            | United States                                                                                              | No                           | 3-A               |
| a-1-12-17                  | Analysis of financial structure of farmer cooperatives                                                                                | United States                                                                                              | Yes                          | 3-A               |
| a-1-13                     | Research, service and educational assistance on membership problems of cooperatives                                                   |                                                                                                            |                              |                   |
| a-1-13-4<br>(Rev.#2)       | Preparation of educational material on agricultural cooperation for youth groups                                                      | Wash., D. C.<br>Ohio, N. C.                                                                                | Yes                          | 3-B               |
| a-1-13-5<br>(Rev.#2)       | Leader training in cooperative membership programs                                                                                    | Wash., D. C.<br>Ohio, Pa. Mass., Minn., Oreg., Nebr., Calif., Kans., Okla., Iowa, Wisc., Maine, Colo., Ga. | Yes                          | A, 3-B            |
| a-1-13-12<br>(Rev.)        | Providing professional advice and assistance on organization and conduct of research in cooperative membership relations              | Wash., D. C.<br>Iowa, N. J.                                                                                | Yes                          | A, 3-B            |

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| Work &<br>Line<br>Project<br>Number | Work and Line Project Titles                                                                                                                  | Work Locations<br>During Past Year                                             | Line Project Incl.in               |            |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|------------------------------------|------------|
|                                     |                                                                                                                                               |                                                                                | Summary of<br>Progress<br>(Yes-No) | Subheading |
| a-1-13-13<br>(Rev.)                 | Programs and training projects in agricultural cooperation for foreign nationals                                                              | Wash. D. C.                                                                    | No                                 | 3-B        |
| a-1-13-14<br>(Rev.)                 | Helping farmer cooperatives to strengthen their membership relations programs and activities                                                  | Iowa, Fla.<br>Wash. D. C.<br>Ark., Mo., Ore.<br>Va., Maine<br>Pa., Wash. D. C. | Yes                                | A, 3-B     |
| a-1-13-15<br>(c)                    | Evaluation of communication processes in farmer cooperatives                                                                                  |                                                                                | Yes                                | 3-B        |
| a-1-13-16                           | Revision of FCA Circular C-135 "The California Fruit Growers Exchange System"                                                                 | California                                                                     | Yes                                | A, 3-B     |
| a-1-13-17                           | Extending the use of member contracts to strengthen farmer cooperatives in economic integration                                               | Wash. D. C.                                                                    | Yes                                | A, 3-B     |
| a-1-14                              | Research, service and educational assistance on transportation problems of cooperatives                                                       |                                                                                |                                    |            |
| a-1-14-6<br>(Rev.)                  | Analysis of transportation and related costs affecting plant locations and relocations of farmers' cooperatives                               | Wash. D. C.                                                                    | No                                 | 3-C        |
| a-1-14-7                            | Analysis of transportation costs and related factors in the development of marketing and purchasing programs of farmers' cooperatives         | Wash. D. C.                                                                    | Yes                                | 3-C        |
| 1101                                | Costs and efficiency of farmers' business firms in marketing farm products                                                                    |                                                                                |                                    |            |
| 1101-9(c)                           | Development of operating standards, controls and procedures for frozen food locker plants                                                     | No. Car.                                                                       | Yes                                | 2-C        |
| 1101-11<br>(Rev.)                   | Determining costs and factors affecting egg handling costs of selected producer cooperatives                                                  | 16 States                                                                      | Yes                                | 1-I        |
| 1101-16                             | Analysis of trade areas of cooperative and other country grain elevators                                                                      | Missouri                                                                       | No                                 | 1-E        |
| 1101-17                             | Analysis of pooling livestock at producer markets and terminal markets at which producers sell livestock directly                             | Wash. D. C.                                                                    | Yes                                | 1-F        |
| 1101-18                             | Appraisal of the role and operating efficiency of mobile feed milling                                                                         | Pa., N. J.                                                                     | Yes                                | 2-A        |
| 1101-19                             | Costs of gin power by type of power in Ark., Okla., and Texas with emphasis on cooperative gins                                               | Tex., Okla., Ark.<br>Wash. D. C.                                               | Yes                                | 1-B        |
| 1101-20                             | Appraisal of feed financing practices by studying operations of farmer cooperatives                                                           | Wash. D. C.                                                                    | Yes                                | 2-A        |
| 1101-21                             | Improving methods of marketing agencies and farmers in procuring and transporting containers and packaging supplies for fruits and vegetables | Florida                                                                        | Yes                                | 2-A        |
| 1101-22(c)                          | A study on the economics of drying and storing rough rice                                                                                     | La., Tex.                                                                      | Yes                                | 1-J        |
| 1101-23                             | Comparative efficiencies of single and multiple gin plants as operated by local cooperatives                                                  | Calif., Tex.<br>Wash. D. C.                                                    | Yes                                | 1-B        |
| 1101-24                             | Evaluating alternative methods and costs of distributing feed in bulk                                                                         | Wash. D. C.                                                                    | No                                 | 2-A        |
| 1101-25                             | Physical distribution of dry edible beans and peas by cooperatives                                                                            | Mich., Colo.<br>Wash. D. C.                                                    | Yes                                | 1-M        |
| 3101-                               | Developing more efficient use of transportation services and facilities by farmers' marketing agencies                                        |                                                                                |                                    |            |

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| Work & Line Project Number | Work and Line Project Titles                                                                                                                                                               | Work Locations During Past Year                | Line Project Incl. in        |            |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|------------------------------|------------|
|                            |                                                                                                                                                                                            |                                                | Summary of Progress (Yes-No) | Subheading |
| 3101-9                     | Improving efficiency in transporting and handling seed by cooperatives and other firms                                                                                                     | Southeast U. S.                                | Yes                          | 2-A        |
| 3101-10<br>(Rev.#2)        | Relation of transportation and handling practices and conditions in moving live-stock from farms to initial destinations and processing plants to loss and damage                          | Iowa, Nebr., Colo., Minn. Wisc.                | Yes                          | 3-C        |
| 3101-11                    | Evaluating transportation costs and charges in handling, storing and marketing wool by cooperatives and others in the United States                                                        | Tex., N.Mex., N. C., Mass., Mont., Idaho Oreg. | Yes                          | 3-C        |
| 3101-12                    | Farmer Cooperative Service cooperation in SM-11 "Transportation of Grain and Grain Products in the South"                                                                                  | Southeastern States                            | Yes                          | 1-E        |
| 3101-13                    | Determination of costs, characteristics and efficiency of transportation of agricultural commodities by farmer cooperatives                                                                | Wash., D. C.                                   | Yes                          | 3-C        |
| 3101-14                    | Relation of specific handling practices and conditions to loss and damage to grain in transit to and from country and terminal elevators                                                   | Tex., Colo., N.Dak., S.Dak., Iowa, Nebr.       | Yes                          | 3-C        |
| 3102                       | Pricing plans and methods of farmers' marketing agencies                                                                                                                                   |                                                |                              |            |
| 3102-9                     | Impact of cooperative bargaining on the market structure and behavior of the processed fruit and vegetable industry                                                                        | Wash., D. C.                                   | Yes                          | 1-D-M      |
| 3102-10                    | An appraisal of pooling practices used by dairy cooperatives                                                                                                                               | Wash., D. C.                                   | Yes                          | 1-C        |
| 3102-11                    | Price differentials obtained for hogs sold by cooperatives on the basis of USDA grades                                                                                                     | Wash., D. C.                                   | Yes                          | 1-F        |
| 3102-12<br>(c)             | Improving the competitive position of Florida celery growers in the wholesale market                                                                                                       | Wash., D. C.                                   | Yes                          | 1-M        |
| 3103                       | Improving processing and storage facilities and techniques of farmers' marketing agencies                                                                                                  |                                                |                              |            |
| 3103-11                    | An evaluation of the use of multi-quart containers by cooperatives marketing fluid milk                                                                                                    | Wash., D. C.                                   | Yes                          | 1-C        |
| 3103-12<br>(c)             | Analysis of operating costs associated with new investments for cooperative grain elevators in the spring wheat area as related to size, storage and handling volume and sideline services | N. Dak.                                        | Yes                          | 1-E        |
| 3103-14<br>(c)             | Increasing capacity and decreasing per unit costs of screw press cottonseed oil mills                                                                                                      | Tex., Miss., Ark. Okla., Wash., D.C.           | Yes                          | 1-B        |
| 3103-16                    | Survey of facilities and operations of locker and freezer provisioning plants in the United States                                                                                         | Wash., D. C.                                   | Yes                          | 2-C        |
| 3103-17                    | Economic analysis of flat type storage of grain at cooperative and other grain elevators in Kansas                                                                                         | Kansas                                         | Yes                          | 1-E        |
| 3103-18                    | Recovery costs and sales values of chemical grade cotton linters at cottonseed oil mills                                                                                                   | Texas, Miss., Ark. Okla., Wash., D.C.          | Yes                          | 1-B        |



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| Work & Line Project Number | Work and Line Project Titles                                                                                                                              | Work Locations During Past Year | Line Project Incl. in Summary of Progress (Yes-No) |            |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|----------------------------------------------------|------------|
|                            |                                                                                                                                                           |                                 | Summary of Progress (Yes-No)                       | Subheading |
| 3103-19                    | Practices, costs and benefits of grain bank operations at cooperative and other feed mills and elevators                                                  | Ind., Ohio, Ill. Iowa           | Yes                                                | 1-E        |
| 3103-20                    | Developing methods and data frozen food locker and related small processing firms need for improving facilities planning and product handling             | Wash., D.C., Iowa               | Yes                                                | 2-C        |
| 3104                       | Improving distribution methods and facilities of farmers' marketing firms                                                                                 |                                 |                                                    |            |
| 3104-8                     | Evaluation of marketing methods, facilities and outlets for Florida avocados and limes as a possible basis for developing a coordinated marketing program | Wash., D. C.                    | Yes                                                | 1-A        |
| 3104-10                    | An appraisal of opportunities for improving local food processing and merchandising through locker and related food processing and distributing plants    | Wash., D. C.                    | Yes                                                | 2-C        |
| 3104-12<br>(c)             | Improving efficiency of growers and grower organizations in marketing farmers' stock peanuts                                                              | N.C., Va., Wash., D. C.         | Yes                                                | 1-G        |
| 3104-13                    | Appraisal of the need and feasibility for developing a joint marketing program for Florida fresh citrus fruit                                             | Fla., Wash., D.C.               | Yes                                                | 1-A        |
| 3104-14                    | Alternatives for cooperatives and livestock producers in integrating production and marketing of livestock and meat                                       | Wash., D. C.                    | Yes                                                | 1-F        |
| 3104-15                    | Appraisal of opportunities and development of methods for improving fowl marketing of cooperatives and other handlers                                     | Wash., D. C.                    | Yes                                                | 1-I        |
| 3104-16                    | Developing more effective marketing of fluid milk through coordinated activity of bargaining cooperatives in the midsouth region                          | Ind., Ky., Tenn. Va.            | Yes                                                | 1-C        |
| 3104-17                    | Appraisal of opportunities for improving the marketing of Eastern Shore, Virginia sweet potatoes by cooperatives and other first handlers                 | Va., Wash., D.C.                | Yes                                                | 1-M        |
| 3104-18                    | The influence of changing procurement practices on the marketing of Florida fresh citrus fruits                                                           | Fla., Wash., D.C.               | Yes                                                | 1-A        |
| 3104-19                    | Developing more effective marketing of non-fat dry milk through coordinated merchandising by manufacturing and marketing cooperatives                     | Wash., D. C.                    | Yes                                                | 1-C        |
| 3104-20                    | An appraisal of the influence of credit upon sales volume in locker and freezer provisioning organizations                                                | Wash., D.C., Pa. Md.            | Yes                                                | 2-C        |
| 3104-21                    | Improved marketing for Virginia white potatoes                                                                                                            | Va., Wash., D.C.                | Yes                                                | 1-H        |
| 3104-22                    | Farmer Cooperative Service cooperation in NEM 28 (Analysis of trends pointing to future consumption and market potential for meats in the Northeast)      | Northeast States                | Yes                                                | 1-F        |
| FCS 0-0-1(DC)(C)           | Economic feasibility for cooperative livestock feedyards and slaughter facilities                                                                         | Montana, North Dakota, Oregon   | Yes                                                | 1-F        |

